

# UNIT FOUR:      Using Numbers, Formulas, and Functions



## Topics:

- Using the Sort function
- Create a one-input data table
- Hide columns
- Resize columns
- Calculate with formulas
- Explore functions

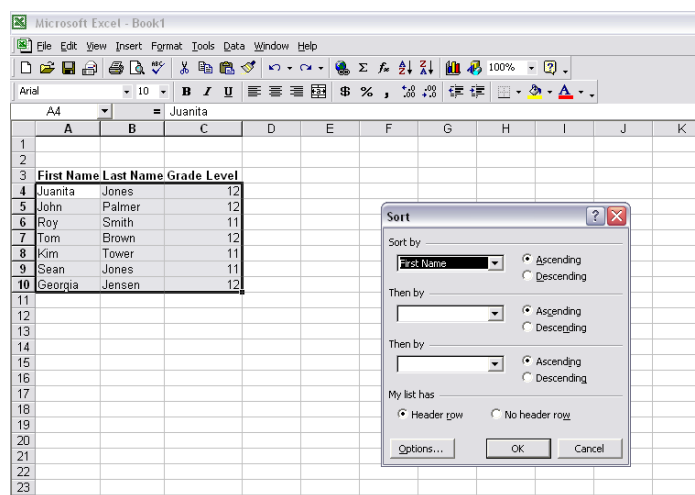
## Do This:

### I. Using the Sort Function:

1. **Open** a new workbook.
2. **Create** the following class list as shown below:

	A	B	C	D
1				
2				
3	<b>First Name</b>	<b>Last Name</b>	<b>Grade Level</b>	
4	Juanita	Jones	12	
5	John	Palmer	12	
6	Roy	Smith	11	
7	Tom	Brown	12	
8	Kim	Tower	11	
9	Sean	Jones	11	
10	Georgia	Jensen	12	
11				
12				

3. Select the data table by clicking **Cell A4** and dragging through to **Cell C10**.
4. On the **Data** menu, click **Sort**.
5. Under **Sort by**, select **First Name**, and then click **Ascending**.



6. Click **OK**.
7. Select the data table again, **Cells A4 to C10**.
8. On the **Data** menu, click **Sort**.
9. Under **Sort by**, select **Last Name** and under **Then by**, select **First Name**. Both are by **Ascending**.
10. Click **OK**. Notice the 2 Jones entries, sorted by Last Name first, then First Name.
11. **Save** (and close) the worksheet in your server folder as: ***Class List***.

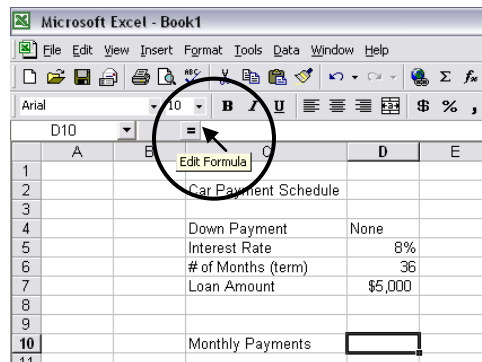
**Do This:**

**II. Creating a One-input Data Table:** Note: All formulas start with the = sign. When you enter a formula and press ENTER, the result appears in the cell, and the formula is displayed in the Formula Box.

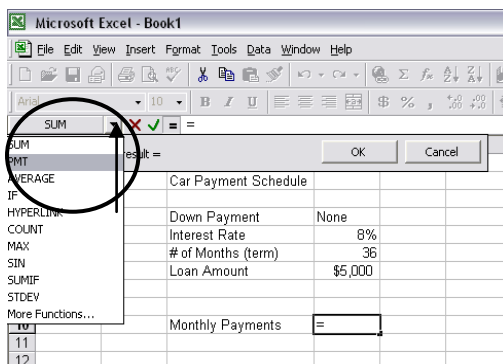
1. Open a new workbook.
2. In Cell C2, type *Car Payment Schedule* and hit ENTER.
3. Widen Column C so that the text fits.
4. Type the following text in the cells shown in the chart:

	A	B	C	D	E
1					
2			Car Payment Schedule		
3					
4			Down Payment	None	
5			Interest Rate	8%	
6			# of Months (term)	36	
7			Loan Amount	\$5,000	
8					
9					
10			Monthly Payments		
11					
12					

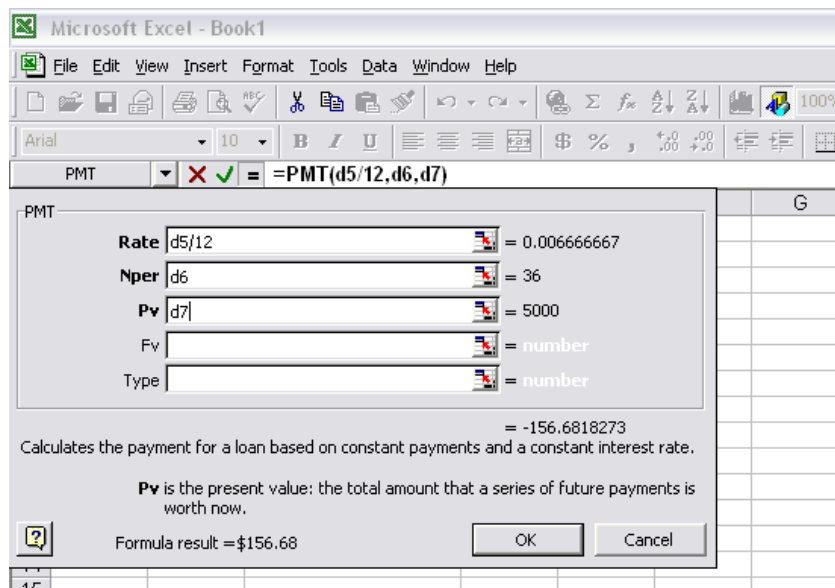
5. Click in Cell D10.
6. Click the **Edit Formula** button (=).



7. Click the **Functions Arrow** and select **PMT** (Payment).



8. Fill in the following cells to calculate what the monthly payment would be for a loan of \$5,000 over 36 months (3 years) at 8% interest:



9. Click **OK** and Excel calculates the payment and places it in **Cell D10**:

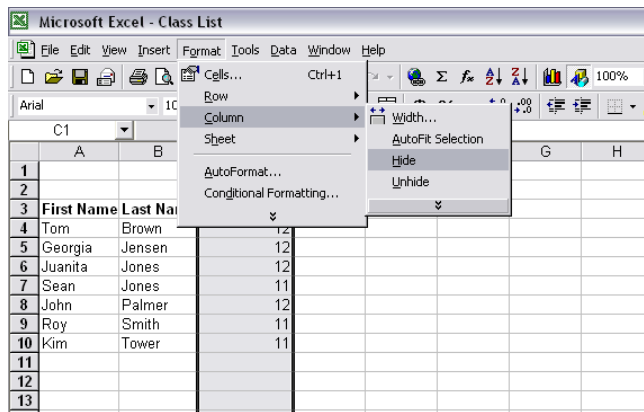
	A	B	C	D	E
1					
2			Car Payment Schedule		
3					
4			Down Payment	None	
5			Interest Rate	8%	
6			# of Months (term)	36	
7			Loan Amount	\$5,000	
8					
9					
10			Monthly Payments	\$156.68	
11					
12					

10. In the **File** menu, Save As: **Payments**.
11. With the workbook still open, make the following changes and see the monthly payment change automatically (in Cell D10) now that you have entered the original formula:
- Type **24** in Cell **D6** and hit **ENTER** to change the months of the loan to 24 months (2 years instead of 3 years).
  - Type **12.5** in Cell **D5** and hit **ENTER** to increase the interest rate from 8% to 12.5%.
  - Type **10,000** in **D7** and hit **ENTER** to increase the loan amount from \$5,000 to \$10,000.

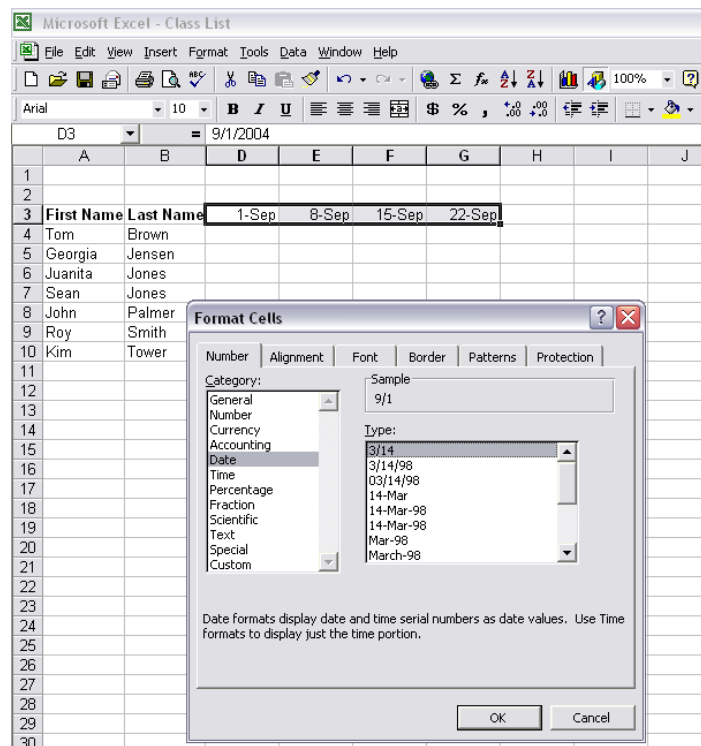
**Do This!** 12. Close the workbook without saving these changes.

### III. Hiding Columns (Temporarily):

1. Open the **Class List** workbook.
2. Click the column **C** header to select the column.
3. On the **Format** menu, position the pointer on **Column**, right-click and select **Hide**. Note: to **unhide Column C**, you would select **Column** headers **B** and **D** and on the **Format** menu select **Column** and **Unhide**.



4. Enter the following dates starting in **Cell D3** with **9/1**. If this format does not appear when you are done, select the **Cells D3 through G3** and format the date to appear as 9/2, etc.

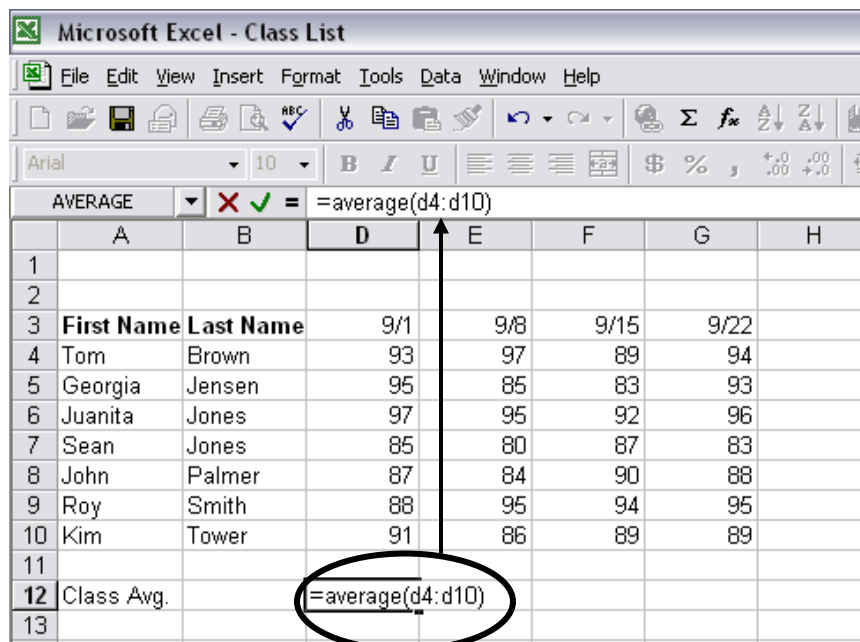


5. Now enter the following test scores for each student:

Name	9/1	9/8	9/15	9/22
Tom Brown	93	97	89	94
Georgia Jensen	95	85	83	93
Juanita Jones	97	95	92	96
Sean Jones	85	80	87	83
John Palmer	87	84	90	88
Roy Smith	88	95	94	95
Kim Tower	91	86	89	89

6. Click **Cell A12** and type **Class Average** and hit **ENTER**. Adjust proper width.

7. Click **Cell D12** and type the following formula to calculate the class average for the first test on September 1: **=average(D4:D10)**



8. Hit **ENTER**. The average should be 90.85714.

9. Drag the **Fill Handle** from **Cell D12** through **Cell G12** to copy this formula for the remaining test score columns.

10. With **Cells D12** through **G12** still selected, from the **Format** menu, click **Cells** and select **Number, 0 decimals**. Your workbook should look like this:

	A	B	D	E	F	G	H
1							
2							
3	First Name	Last Name	9/1	9/8	9/15	9/22	
4	Tom	Brown	93	97	89	94	
5	Georgia	Jensen	95	85	83	93	
6	Juanita	Jones	97	95	92	96	
7	Sean	Jones	85	80	87	83	
8	John	Palmer	87	84	90	88	
9	Roy	Smith	88	95	94	95	
10	Kim	Tower	91	86	89	89	
11							
12	Class Avg.		91	89	89	91	
13							

11. Quick **Save** your worksheet.



12. Click **Cell H3** and type, **Total Tests**, and hit **ENTER**. Adjust proper width.

13. In **Cell H4** type the following formula to get the average mark for this student (Tom): **=average(d4:g4)**

14. **Copy this formula**, using the **fill handle** in **Cell H4** through to **Cell H10** to get the averages for all students.

15. **Format** the marks so that they are **Number with 0 Decimals**.

16. **Copy** this formula to **Cell H12** as well!

The screenshot shows the Microsoft Excel interface with the title bar 'Microsoft Excel - Class List'. The menu bar includes File, Edit, View, Insert, Format, Tools, Data, Window, and Help. The toolbar contains various icons for file operations, editing, and formatting. The formula bar shows 'H13' and an equals sign. The worksheet has columns A through I and rows 1 through 15. The data is as follows:

	A	B	D	E	F	G	H	I
1								
2								
3	First Name	Last Name	9/1	9/8	9/15	9/22	Total Tests	
4	Tom	Brown	93	97	89	94	93	
5	Georgia	Jensen	95	85	83	93	89	
6	Juanita	Jones	97	95	92	96	95	
7	Sean	Jones	85	80	87	83	84	
8	John	Palmer	87	84	90	88	87	
9	Roy	Smith	88	95	94	95	93	
10	Kim	Tower	91	86	89	89	89	
11								
12	Class Avg.		91	89	89	91	90	
13								
14								
15								

17. **Save** this completed worksheet in your server folder as: **Class List 2**.

**Do This:**

**Practice Exercise, Unit 4— SAVE THIS FILE AND SHOW YOUR TEACHER THE COMPLETED WORKSHEET.**

1. **Open** the workbook, **Class List 2**.
2. Click on **Column Header B** and from the **Format** menu, select **Column, Hide**.
3. Click on **Column Header H** and from the **Edit** menu, select **Delete** to delete the column.

4. Starting in **Cell H3**, enter the following dates and test scores.

Name	9/29	10/6	10/13	10/20
Tom	88	92	93	95
Georgia	87	85	91	90
Juanita	91	93	98	99
Sean	88	84	82	90
John	86	82	91	92
Roy	91	85	90	93
Kim	90	94	88	96

- Format the dates from **Cells H3 to K3** to match the **Cells D3 through G3**.
- Place your cursor **between each column header** and double-click to adjust the width of each column to fit the contents.
- Click in **Cell L3** and type, **Total Tests**. Adjust the column width in the column headers.
- Click in **Cell L4** and type the following formula to get the average mark for this student (Tom): `=average(d4:k4)`
- Quick Save** this worksheet.
- Click in **Cell L4** and **drag the fill handle to Cell L10** to copy the average formula for each student.
- With **Cell L4 to Cell L10** still selected, from the **Format menu** click **Cells**, and under the **Number tab**, select **Number with 0 decimals**.
- Click in **Cell G12** and **drag the fill handle to Cell L12** to copy the class average formula.
- Click and drag from **Cell D3 through to Cell L3** to select the cells and use the **Bold** button to **Bold** the column headings. Your worksheet should look like this:

	A	D	E	F	G	H	I	J	K	L	M
1											
2											
3	<b>First Name</b>	<b>9/1</b>	<b>9/8</b>	<b>9/15</b>	<b>9/22</b>	<b>9/29</b>	<b>10/6</b>	<b>10/13</b>	<b>10/20</b>	<b>Total Tests</b>	
4	Tom	93	97	89	94	88	92	93	95	93	
5	Georgia	95	85	83	93	87	85	91	90	89	
6	Juanita	97	95	92	96	91	93	98	99	95	
7	Sean	85	80	87	83	88	84	82	90	85	
8	John	87	84	90	88	86	82	91	92	88	
9	Roy	88	95	94	95	91	85	90	83	90	
10	Kim	91	86	89	89	90	94	88	96	90	
11											
12	Class Avg.	91	89	89	91	89	88	90	92	90	
13											
14											
15											



14. Click in **A14** and type **your name**.

15. **Save** this worksheet in your server folder as: **Activity Four**.

## Unit Four

### Review Questions

1. All formulas start with the + sign in a cell.
  - a. True
  - b. False
  
2. When you enter a formula and press ENTER, the result appears in the cell, and the formula is displayed in the Formula box.
  - a. True
  - b. False
  
3. When you perform a sort, the data can be sorted in either ascending or descending order.
  - a. True
  - b. False
  
4. When you "hide" a column, you permanently delete it from the workbook.
  - a. True
  - b. False
  
5. To format the date after selecting a cell or cells, you do this:
  - a. Tools menu, Customize, Options
  - b. Format menu, Column, AutoFit Selection
  - c. Format menu, Cells, Number Tab, Date
  - d. Format menu, Style, OK.